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Physical activity and body image: Intertwined health priorities identified by transmasculine young people in a non-metropolitan area

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ABSTRACT

Background: A dearth of research exists about the health behaviors of transgender young people (TYP). As we seek to learn more about transgender (trans) health, community-based participatory research (CBPR) approaches are crucial for incorporating TYP's needs into the formulation of research questions and development of health behavior programing.

Aim: Explore body image and exercise as priorities among TYP.

Methods: Trans masculine young adults ($N = 16$) in a small city in the Midwest took part in semi-structured interviews about their health behaviors and priorities. Theme analysis was used to capture key patterns in participants' responses. Specific analysis steps included initial and more specific coding, analytical memos, organizational matrices and reports, and discussion about results with participants.

Results: Participants identified exercise and body image as connected primary health concerns. They discussed these issues in terms of three themes: Body shape as motivation for exercise; Poor body image, stigma and fear as exercise barriers, and; Exercise or lack of, as destructive. Participants wanted to exercise to achieve a certain body shape, not for health or as stress relief. They cited gyms as unwelcoming, however. They also worried about discrimination and did not feel sufficiently comfortable with their bodies to exercise. When they could not exercise, they used harmful behaviors, like restricted eating, to achieve a specific male shape.

Conclusions: Using participatory methods allowed us to understand the priorities of a group of Transmasculine young people. Our findings suggest that it is important to continue to explore TYP's body-related motivations for exercise and understand the balance between exercise as a positive health behavior, and a potentially harmful one, in light of TYP's complex body image concerns. Trans friendly gyms and gym policies could promote safe exercise and continued anti trans discrimination work and policy advocacy can promote the safety of TYP in all spaces.

KEYWORDS

Community-based participatory research; health behavior; qualitative research; transgender; exercise; body image

Introduction

Understanding, documenting, and addressing the health of people who identify as transgender is a public health priority (U.S. Department of Health and Human Services, 2014). Transgender (trans) is an umbrella term for persons whose gender identity or expression differs from the social expectations for the person's gender assigned at birth (Berkeley, 2018). Many trans people experience social stigma and discrimination related to their gender identity and presentation (Bockting, Miner, Swinburne Romine, Hamilton, & Coleman, 2013; Hendricks & Testa, 2012; McLemore, 2018; Smith et al., 2018). This stigma can be associated with poor mental health outcomes like anxiety, depression, and suicidality (Bockting et al., 2013; Hendricks & Testa, 2012; McLemore, 2018; Smith et al., 2018). Research also indicates that trans persons experience stigma and discrimination in health care settings, which compromises their access and use of health services, and ultimately, their mental *and* physical health (Poteat, German, & Kerrigan, 2013). Although scholarship about trans people's health is growing, important gaps in populations, methods, and health areas remain, underscoring the need for continued research (U.S. Department of Health and Human Services, 2014). This analysis adds to the existing body of trans health literature by exploring the needs of a relatively understudied group – transmasculine youth living in non-metropolitan

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U.S.; via an underused method, community-based participatory research (CBPR); and unearthing new perspectives about limited areas of knowledge – trans youth's experiences with and meanings of body image and exercise.

Trans health in non-metropolitan U.S

The majority of what we know about trans health is from samples of urban populations (Sinnard, Raines, & Budge, 2016; Smith et al., 2018). The needs of trans persons in rural and non-metropolitan settings differ, however (Koch & Douglas, 2016). Smaller communities are less diverse overall than urban communities and stigma, confidentiality challenges, and limited services are more substantial health factors in non-metropolitan areas than larger cities (Smith et al., 2018). Lesbian, gay, bisexual, transgender (LGBT) people living in non-metropolitan areas experience greater homophobia and discrimination (Swank, Fahs, & Frost, 2013). Likewise, several studies indicated that discrimination against LGBT (Tilcsik, 2011) and trans people specifically (Kosciw, Greytak, & Diaz, 2009), varies by geographic region. Discrimination is greater in Southern and Midwestern states versus the Northeast or Western United States (Sinnard et al., 2016). Consequently, Sinnard and colleagues (2016) found correlations between anxiety and depression with geographic location for Midwest regions. In addition to these challenges, fewer healthcare providers offer services to trans people in rural areas, and those who do may not have the same expertise as providers in metropolitan areas. These factors point toward the importance of understanding the health priorities of subgroups of trans people, including specific gender experiences and geographic location. Thus, the current research specifically focuses on the health priorities of transmasculine individuals in non-metropolitan Midwest U. S.

Participatory research approach

CBPR is a collaborative approach to research that begins with a topic of importance to the research participants. The rationale for CBPR is that meaningful community engagement in the planning and evaluation of research is critical to the ultimate success of public health interventions (Wallerstein & Duran, 2006). These researcher-participant co-led projects aim to address knowledge gaps, prioritize participant perspectives, and bring research to action. For these reasons, CBPR is commonly used with marginalized populations to translate their input into guidance for policies and programs (Wallerstein & Duran, 2006).

Despite the fit and potential for success to garner information about trans health, CBPR strategies are underutilized in research with trans young people – despite a few notable exceptions (Bryant, Damarin, & Marshall, 2014; Pinto, Melendez, & Spector, 2008; Smith et al., 2018; Wright et al., 2017). In the analysis described in this article, we present data from a parent CBPR study that explored young transmasculine people's experiences with apparel and identity (citation withheld for anonymous review). The participants themselves preferred the term transmasculine to describe them as a whole. Transmasculine is a term underneath the transgender umbrella, and refers to a gender nonconforming or non-binary person, with a masculine spectrum gender identity, and the sex of female listed on their original birth certificate. The project focused on exploring apparel (i.e., information gathering) and influencing designs for more affirmative clothing for transmasculine people (i.e., translating the research to action). During the course of this project, the participants identified health as an area they wanted to talk more about and asked the researchers to add this topic to the existing study. The researchers responded and added an interview to the study in which participants could talk about their health priorities, experiences, and concerns. Interviews focused on health broadly but participants identified body image and exercise as important interconnected health experiences in their lives. As per CBPR, this analysis centers on the meaning of these health activities as voiced through participants in the interviews and ways to translate participants' perspectives into health solutions.

Body image

A growing body of research indicates that body image concerns are central to stress and body

dissatisfaction among trans people and can contribute to poor mental health and/or disordered eating, and may be related to gender dysphoria (Jones, Haycraft, Murjan, & Arcelus, 2016) A transgender person's satisfaction with their body may be related to the extent they feel their body is congruent with their gender identity (Kozee, Tylka, & Bauerband, 2012). Among trans individuals who have not accessed medical intervention, body dissatisfaction can be similar to people with eating disorders (Bandini et al., 2013). In a sample of Finnish transgender adults, for example, a majority of respondents reported past or current disordered eating, specifically for the purpose of suppressing undesirable gender characteristics (Algars, Alanko, Santtila, & Sandnabba, 2012). Witcomb et al. (2015) found greatest body dissatisfaction in gender-identifying body parts, body shape, and body weight, with greatest risk among trans males. For many trans men, the chest area can cause the most dissatisfaction (Marone, Iacoella, Cecchini, Ravenna, & Ruggieri, 1998).

Qualitative explorations of trans youth's perspectives about body image are limited. McGuire, Doty, Catalpa, and Ola's (2016) is one exception, however. They interviewed transgender young people about body image and found body dissatisfaction related to gender dissociation and body size. Thoughts surrounding body image were both internally focused (self-criticizing) and externally focused (social distress; related to how they will be perceived by others). Those who described being satisfied with their body were more accepting of themselves and how others perceived them, demonstrating a developmental relationship between gender/body size and body image. McGuire and colleagues (2016) findings were not focused on medical transition, specifically, but did indicate that a progression in reflecting on one's body image can be tied to medical transition and/or one's own acceptance of themselves.

Although evidence, like McGuire and colleagues (2016), suggests medical treatments for transgender individuals desiring surgical interventions can improve body image (Kraemer, Delsignore, Schnyder, & Hepp, 2008), medical interventions may not always be desired or accessible. Moreover, most of the research on body image of trans individuals has specifically focused on the significance of medical interventions, and not on the coping or strategies employed by transgender individuals who do not want or cannot yet access medical interventions. This analysis builds on Maguire and colleagues (2016) by describing body image from a different angle – the meanings youth ascribe to body image and exercise together, especially if they are not interested, ready, or able to undergo medical or surgical body change interventions.

Exercise

Existing research on exercise indicates that trans persons participate in less exercise than their cisgender counterparts do. Trans people experience more stress and chronic disease (e.g., obesity) than cisgender people, making exercise even more vital (Downing & Przedworski, 2018; Vilas, Rubalcava, Becerra, & Para, 2014). Trans people also report sports to be a negative activity because of stigma and body discomfort (Jones, Arcelus, Bouman, & Haycraft, 2017). Among transgender individuals seeking medical care, those who were taking hormones, reported more physical activity than those who were not taking hormones (Jones, Haycraft, Bouman, & Arcelus, 2018), however, the impact of sex reassignment surgery on physical activity is unknown. De Silva et al. (2016) explored several quality of life outcomes in a small group of transgender women who had surgery, and did not find an increase in physical activity after surgery. The perception among transgender individuals, however, is a hope of or potential for being more physically active after surgery (Jones, Haycraft, Bouman, & Arcelus, 2017).

Similar to body image, few studies explore the meaning of exercise among trans youth qualitatively, especially among trans persons who do not want or cannot access medical interventions (Jones et al., 2018). Existing research on exercise identifies a strong need for additional research that explores these behaviors, what they mean to trans people, and how trans people prioritize them in their overall picture of health (Smalley, Warren, & Barefoot, 2016). This study aims to contribute to that goal by describing exercise and

body image as self-identified (e.g., via CBPR) intertwined health priorities among trans youth.

Materials and methods

Participants

We recruited participants who identified as transmasculine. Additional inclusion criteria included being over the age of 18, and not having had any surgical interventions. We excluded participants who had undergone surgical interventions because the parent project was focused on apparel and well-being and the apparel needs of people who had surgeries and those who had not were too different to include in the same study. Our team was interdisciplinary and included a public health researcher with expertise in CBPR, a social worker, and a self-identified trans man, who recruited participants through local trans-identified social groups and networks via flyers. Two participants enrolled in the project but did not participate, for unknown reasons. The final sample included 16 people, a sample size that proved to be sufficient to achieve data saturation, or repeating data patterns (Charmaz, 2006).

Project procedures and data sources

We obtained consent from all participants prior to their participation in any project activities. The authors' Institutional Review Board approved project procedures. The first author developed and conducted an interview focusing specifically on physical, mental, and social health based on participant input, and data that resulted from the parent project. She conducted semi-structured face-to face one-hour interviews with participants. The first author is a White cisgender woman. She had an existing rapport with participants from working alongside them in the parent project to disseminate project findings. Nonetheless, it is possible her identity affected or limited participant sharing. Example questions included: "When I say the word "healthy" what comes to your mind – what does a healthy transmasculine person act like, look like, and do?" "How are you healthy?" "If you could change any one of your health behaviors what would it be?" "What are the greatest challenges transmasculine young people face to being healthy?" "What is your greatest health priority?" "What goals do you have for your health?" "How do you work on meeting these goals?" Participants received $25 compensation for completing the interview.

Analysis

We used strategies of theme analysis (Guest, MacQueen, & Namey, 2012) to capture key patterns in health priorities according to participants. As per Guest, theme analysis is an inductive and exploratory approach that builds ideas and generate hypotheses for further study. Codes come from the data and represent themes, implicit and explicit ideas within the data, and are applied or linked to raw data as summary markers for later analysis. This approach synthesizes different theories but is largely interpretivist in nature and values the meanings that people ascribe to their experiences (Guest et al., 2012).

Following Guest (Guest et al., 2012), our coding procedures had multiple steps. First, we recorded, transcribed, and edited interviews to remove personal identifiers and to replace names with letter identifiers. The first author of this paper maintains and holds the original data set (e.g., transcripts of interviews). Analysis steps included initial and more specific coding, analytical memos, and organizational matrices and reports. First, the first and fourth author (e.g., the coders) reviewed each interview in detail and conducted initial coding – which consisted of noting ideas and words that came up in the interviews. The goal of the first round of coding was to identify all possible patterns of participant generated ideas related to their self-reported health priorities in the data. Coders assigned descriptive code labels to common words, phrases, and topics. Coders conducted this process separately and then compared their initial descriptive lists to move on to the next steps in the analysis.

Next, the coders conducted specific coding based on the initial coding results. They sorted, collapsed or expanded the data into three main themes (i.e., the ones in the results section) by identifying similarities and differences between initial codes and grouping like subjects together. Coders created a codebook that identified and

defined these themes, and then using the codebook, matched interview text excerpts to codes. Both coders started the analysis by coding 25% of the data independently to fit these themes, and then calculating coder agreement. After the first 25% of coding was complete, agreement was only 70%. The coders clarified the code definitions and coded another 25% section of data. After the second round of coding, coder agreement was 95%, so the coders completed the analysis on all of the data – meeting weekly to discuss coding, preliminary findings, and analysis memos.

Then the coders created a matrix that outlined and defined each of the themes presented in the results section and a report that listed example quotes under each theme, to organize the data for the results section. The first author, who conducted many of the interviews, and the fourth author, a self-identified trans man that took part in all project activities, reviewed the matrix and report to ensure that the data appropriately reflected the content of the interviews.

Results

Participants ($N = 16$) identified as transmasculine and were between the ages of 19–25 years old. Participants had not undergone any surgical procedures and many participants described going on and off hormones. Fourteen of the participants identified as White, one as Hispanic, and one as Black and thirteen were employed. Identifiers, in the form of initials, are used instead of participant names below. The intent of our theme analysis was to describe participants' expressed priority health experiences. Participants identified exercise and body image and the relationship between them as primary health concerns. They discussed these issues in terms of three themes: (a) body shape as motivation for exercise; (b) body image, stigma and fear as exercise barriers; and (c) exercise or lack of, as destructive. In brief, participants were motivated to exercise to achieve a specific masculine figure. Yet, exercise was made difficult by fear, discrimination, or body discomfort. If participants could not exercise, they commonly took part in negative eating behaviors to achieve a desired body image.

Body shape as motivation for exercise

Participants wanted to exercise to achieve a certain body shape. Specifically, only two participants cited stress reduction as their reason for exercising but most participants said that they attempted exercise to achieve "the inverted triangle (PTC)," or as MC said, "My motivation [for exercising] is really to develop a male physique. I need to broaden my shoulders, develop my back, slim my waist and legs down - you know, get the Dorito shape." The focus on exercising to achieve body shape and *not* to experience stress reduction is important. It likely reflects participants' priorities – but also suggests opportunities to further develop motivations for exercise for trans men around improved well-being and mental health.

SH and KF explained the influence of popular media, noting that trans men in the media promoted these ideals – and that this shape represented "attractive, popular super-ripped, passable, normal [men]" (SH). Related to that, most participants wanted to gain muscle weight – and said that exercise was the best way to achieve this goal. Although several participants worried about being overweight, the majority described thinness as more problematic - as "sad," (MC) or "stigmatized" (KF) – words laden with meaning around men's self-worth. Participants comments overall summarized the potential pressures transmasculine persons face and how these pressures drive their motivations and behaviors.

Shape and weight also made participants feel "masculine." Achieving this feeling was very important, as many participants described negative body feelings. For instance, SA said:

> [I want to] look more masculine like the guys lifting tons of weights. Building muscle makes me feel better in general. And the more exercise, depending on the area, you can change, you can have big arms … If you have big arm muscles it looks very masculine … The more work you do with arms and shoulders, it can help reduce chest size, which is super [important to reduce breast size pre-surgery].

Here, SA noted the potential for exercise to assist with body changes pre-surgery. Others also thought that exercise could potentially substitute for surgical transition interventions. EE

recognized that he was "probably the average size of most men in the world" but said he still "felt small," and had a vision that he wanted to fulfill of "how a guy should be big and built." He said if he could build enough muscle "I won't even need surgery … That internal pressure is always eating at me. I won't feel dysphoric if I can just put in the work [exercise]. That keeps me working out." SH also described a "constant pressure to go to the gym" and said that exercise could enhance the effects of testosterone. He also explained that exercise was easier to take control over, versus surgical interventions, explaining:

> When you are trans you are told all these things about yourself, like you are not going to be attractive, you are not going to be successful, you are not going to be able to date. One of these first things you hear throughout your life is that if you have a certain body, some of those things will go away - people will still find you attractive, people will still want to date you, if you look a certain way … When you are told you are not going to have a future, you are not going to have a job, you are not going to have a family or a partner … [Exercise] is one thing you can take control of … this is at least something I can control and make me look more masculine.

Thus, SH believed he could use exercise to have the type of body that he wanted and that would encourage his social acceptance as male. Given the high costs and inaccessibility of surgery to many of our participants, like SH, EE, and SA, suggested exercise was easier to control because it was lower cost and more accessible.

Body image, stigma, and fear as exercise barriers

Despite their motivations, participants described many barriers to exercising. CM noted that even though they wanted to go to the gym to gain muscle, lacking a "beefed up" appearance made it hard for them to even enter the gym. KF said, "My physical wellbeing depends on finding a gym, [but] being comfortable in a gym? I don't know. I'm embarrassed to go to the gym." Thus, the problem was cyclical. Participants believed a particular body would help them feel better but because they felt uncomfortable in their body, they could not attend a gym. For others, fear was a factor, not just personal embarrassment. SH said, "I've had one or two [incidents], of [people] just saying like, 'Faggot, get off that piece of equipment,' or something like that." A few participants mentioned that people stared at them at the gym and like PTC, said that as a result, they did not want to return to the gym – "I won't come back and I'm going to get fatter." CM said that their poor eyesight protected them from worrying as much about what others at the gym thought of them. To endure the gym, they tried to see it as their "own bubble." Celebrating poor eyesight because it protected against perceived or actual judgement and discrimination is a testament to the intensity of participants' insecurities and fears. Although strength training was the most commonly discussed form of exercise, fear extended to other forms of exercise as well. JB explained, "One of my favorite activities is walking, and hiking … but I'm scared of, you know, getting mugged and raped." JB's fears specifically stemmed from their gender expression. They perceived an actual discrimination that trans people face overall and at the gym which hurt their ability to engage in exercise.

Several participants sought alternatives to working out with others. These alternatives showcased participants' creativity and persistence to exercise, but again, highlighted the power of their fears and challenges. MC noted:

> I had to go with gym buddies for a while, but the dysphoria was still really bad. I have dysphoria at the gym now. I haven't been to the [real] gym. I have free weights at home. I actually have taken my shower curtain rod off, and then I'll twist off the knobs and put water jugs on either side so I can bench press. So, I've kind of made my own in-home gym kind of thing. [The gym] is not always a real comfortable space for me.

Similarly, SA said, "I just don't want to make a show of myself [at the gym] … So most of my exercise comes out of home. I do what I can with no equipment." To avoid the gym EE described how he found a trainer for him and his friends:

> There is a group of other trans-guys in [place] that all work out together. My friend mentioned [to a trainer] how this was a need that he saw in the community. [The trainer] said, "Yeah, if they need a safe place to come and work out …" It has been cool to have a group of trans-guys that work out together.

Participants were resilient problem-solvers but had to work especially hard to exercise safely.

Exercise or lack of, as destructive

Participants were generally so concerned with achieving a certain body image that they would engage in extreme or unhealthy behaviors to reach their desired outcomes. A few participants mentioned over-exercising. MC said that the "worst" thing they did to themselves to get "the shape I want" is, "Worked out too hard and sprained my neck. That's the worst thing I've done, because I wanted my body to change really fast." He went on to describe this behavior as "not drastic". Describing an injury as not drastic highlights participants' challenges balancing all of their health needs (i.e., physical injury to achieve a participant shape to protect against mental distress). Another participant, CM, discussed getting sick because they were working out and not eating well and attributed this to "a high level of dysphoria." They also said:

> [I was] destructive. I was not eating well at all my first semester because that was my first semester [living alone], and so not only was there no one else keeping up with what my diet looked like, but I was the only one responsible for it. That put a lot more effort on myself on deciding, on making the decision that, yes, I am worth the food I am putting on the table. Yes, I am worth the food that I am putting on the table.

By reiterating and repeating that eating was about their sense of self-worth, CM linked their harmful behaviors to their value as a transmasculine young person.

If participants faced barriers to exercise, like those mentioned above, they commonly discussed eating (or not) as a way to modify their bodies. OLV said, "I intentionally kept myself really, really thin and I know it was half because it stopped my periods and because it gave me less fat in feminine areas." SH, PTC, SA, and KF all specifically cited body image, stigma, or fear-based barriers to exercising. SH said they would question whether or not they should eat to modify their body shape. Like MC, he downplayed his behavior saying, "I wasn't to the point where I wasn't eating, or I wasn't binging or purging or anything like that. Just kind of constant in the back of your mind, like do you need this? Or like, should you eat this?" PTC also said not eating "worked for them" to achieve a certain body shape. These statements show how participants evaluated behaviors as working even if the behaviors harmed aspects of their health.

Likewise, several participants mentioned using diet pills to modify their body. SA said:

> Diet pills up caffeine levels and raise your heart rate and that kind of thing. They are sort of unhealthy, but people have results with them and I personally think if you take a lower dosage of it paired with exercise and working out, it's okay. That is what I'm currently doing. The recommended dosage is three pills and each pill has enough caffeine to be two and a half cups of coffee. I took the three and … I need to not do that. That's like 14 cups of coffee. That's a lot.

KF said they took diet pills before "becoming trans" and added, "it was connected because I hated my body anyways. I definitely want to be, like, bigger. Like taller, and not a stick. And more muscley." These examples show the dangers that transmasculine people's concerns about their bodies combined with internal and external pressures can pose.

Discussion

Young transmasculine people in this study identified body image and exercise as related key health priorities, amid other health issues and challenges in their lives. Their discussions revolved around three points. Participants described their motivation for exercise as driven by the desire to achieve a specific masculine figure and/or as a possible solution if surgery was not possible. Despite this desire, exercise was uncomfortable, mostly due to fear or body discomfort. Lastly, particularly in the absence of being able to exercise, participants engaged in negative behaviors, notably eating behaviors, to achieve a desired body image.

Identifying participants desire to and rationale for exercise contributes qualitative information to the existing literature and provides details about trans masculine people's level of motivation to exercise. High motivation is an important factor in many behavioral theories guiding how to support physical activity (Teixeira, Carraca, Markland, Silva, & Ryan, 2012) – an antidote to many chronic illnesses, some of which are common among trans populations (e.g., obesity, etc.)

(Downing & Przedworski, 2018). Thus, knowing that young transmasculine people *want* to discuss and address exercise is crucial in developing future interventions to support their health.

The fact that body shape was the factor that motivated exercise reinforced the importance and seriousness of body image concerns among young trans people. Current literature stresses that hormones or surgery can lead to improvements in body image and motivation to exercise (Jones et al., 2018). Our sample included men who had not yet had surgical interventions. Some did not want them, and many talked about the challenges of finding and affording surgeries. Lack of access may very well be a function of living in a smaller area with fewer resources for trans people overall. Relatedly, participants indicated that they were using exercise to achieve specific body goals that could be otherwise accomplished by surgery. They were unable to rely on medical interventions to improve their body image. This reinforces the notion that trans people in non-metropolitan areas may have different concerns and need different solutions than trans people in metropolitan areas.

Our findings also add to the body of research that indicates that some trans people take part in self-harming behavior (Peterson, Matthews, Copps-Smith, & Conard, 2017; Pfeffer, 2008). Consistent with the Algars, et al. (2012) findings, our participants' narratives focused around over-exercising, under-eating, or controlled eating to accentuate certain body parts and hide others – or to stifle a menstrual period. As suggested in other research (e.g., van de Grift et al., 2016), participant's concerns were not limited to sexual body parts only. Discomfort came in many forms and participants went to unhealthy lengths to build or look like they had more muscle.

These findings continue to highlight the significance of body and physical presentation among transgender young people. Transgender people experience social distress specifically related to how others' are perceiving them (Bauerband & Galupo, 2014), so much so that they will engage in dangerous behaviors in an effort to control how others' are perceiving them. The need to present oneself in a way that aligns with one's gender is an added layer, that exacerbates body image issues among transgender young people.

The intent of our analysis was to explore the health priorities of transmasculine young people in a small city. We were purposeful about seeking and raising the views of this group specifically, which is also, ultimately, a limitation of the study. The sample was not racially/ethnically diverse, so our findings do not capture the experiences of transfeminine people, ethnically diverse trans people, or urban audiences. We also interviewed participants about their health concerns and let the interviewees drive the discussion of specific priorities (i.e., exercise, body image). We may, however, have received more information about these two issues if we directed all of the questions to exercise and body image. The different social position of the interviewer (cisgender woman) may have also limited participants input about their experiences.

Nonetheless, the findings raise important directions for future research and suggest practice implications. Researchers must seek the views of diverse and underrepresented trans audiences – including those in smaller cities where discrimination may be higher and resources may be lower. Qualitative and participatory research are relevant but underutilized to understand trans health issues. These methods are well suited for understanding community priorities and suggesting new solutions. Based on our findings, future qualitative research must continue to explore exercise rationales, the relationship between body image and exercise, and intervention solutions for the group in our sample and other trans populations. Exploring the needs of trans people for whom surgery and/or hormones are unwanted or inaccessible and thus cannot lead to improvements in body image or exercise patterns is imperative. CBPR approaches can highlight the experiences of participants, not just researcher assumptions about what participants are experiencing. This method was useful to elaborate on the way exercise and related behaviors were top health priorities for this group. Additional CBPR can help build trust with researchers, garner meaningful information, and inform directions for future research.

Regarding practice, our findings suggest that body image and exercise solutions are needed on multiple levels (CDC, 2017). Transmasculine

persons in our sample said that concerns about their body image were deterrents to exercising (i.e., individual level). Yet, they noted lack of gym space (community level) and fear of discrimination (social level) as additional barriers. These findings indicate that unless challenges are addressed in multiple ways, trans people may still report poor exercise patterns and poor body image. Clear nondiscrimination laws covering gender identity and expression are critical. Such laws can guide businesses, like gyms, to have policies against discrimination and train employees to follow those policies. Laws do not ensure fair practice, however, so additional commitment and signage to support trans people and their use of sex-specific facilities that best support them, are also important (Equality, 2019).

Trans persons in our study were motivated to exercise based on achieving a certain body shape. Such motivation is helpful for behavior change (Teixeira et al., 2012). Building on this motivation can help trans people consider the physical and mental health benefits of exercise as motivators as well. Given that trans persons want to exercise, it is critical that exercise facilities are welcoming. Medical offices are beginning to transform to be more trans friendly and gyms can do this too by adding gender neutral forms, bathrooms, and anti-discrimination policies (American Medical Association, 2018). There may also be value in trans only exercise classes or training opportunities. In addition, the lack of safe opportunities for trans youth to participate in organized sports may also hinder youth's ability to be socialized into exercise and sport participation. Evidence-based policies to help schools and sports teams support trans athletes to take part in sports may help trans people navigate exercise spaces better (Jones, Arcelus, Bouman, & Haycraft, 2017). Trans persons may be at risk for body image issues and body mistreatment if they can't get the exercise experience that they desire. Thus, it is also important for health care providers to be aware of the possible need to encourage and problem-solve activity and eating concerns.

Although engaging in physical activity is essential for healthy living, the primary motivations for these transmasculine young people was to establish control. They perceived physical activity to be the one aspect in which they could modify their appearance outside of medical intervention (not in their control). Using activity to actually control *more* than just one's body (in this case how others perceive and treat you) might suggest trans folks are at increased risk for high-risk behaviors in relation to exercise (e.g., over-exercising, body image concerns). Special consideration should be taken when promoting these particular health behaviors. Increasing the perception of control a transmasculine person has over their health in other ways (clothing; health advocacy and selecting/creating body-positive communities) may reduce the potentially harmful approach to physical activity and food restriction that was reported among this group.

Physical activity promotion with this population should take care in simultaneously promoting individual body acceptance and positivity. Although body image research and interventions have historically focused largely on how to manage negative aspects of body image, recent research and intervention interest has turned toward positive body image (Tiggemann, 2015) - acceptance of one's body and the aspects inconsistent with societally-prescribed ideals and appreciation for the functions one's body performs (Tylka & Wood-Barcalow, 2015). Although many body positivity interventions have been implemented among cisgender heterosexual populations (Alleva, Holmqvist Gattario, Martijn, & Lunde, 2019; Halliwell, 2015; Ramseyer Winter, Teti, Landor, & Morris, 2019; Tiggemann, 2015) our findings suggest that transmasculine people may need reminders of the true variability of male and female bodies to reduce the salience of community/media pressure to achieve a particular body type and may also benefit from a focus on self-appreciation.

The leading causes of death in the U.S. can be attributed in part to health behaviors like exercise (Johnson, Hayes, Brown, Hoo, & Ethier, 2014). Although research on trans people is growing, more information is needed to develop interventions to support healthy behaviors. Exercise levels and body image are key concerns for the U.S. population overall (Promotion, 2018). Among transmasculine people, these issues are nuanced

and call for specific understanding of the individual, community, and social barriers. Our findings reveal that transmasculine young people identify these areas as primary health concerns that need attention. Young trans people in non-metropolitan areas may lack the resources, safety, and support of those in larger cities, making it more important to include their voices in ideas for solutions.

Declaration of conflict of interest

The authors have no conflict of interests to declare.

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